


PROGRAMMABLE CONTROLLERS  
MELSEC-F

Changes for the Better

FX-232AWC-H

USER'S MANUAL

Manual Number	JY997D12601
Revision	F
Date	December 2010



This manual describes the part names, dimensions, mounting, and specifications of the product. Before use, read this manual and the manuals of all relevant products fully to acquire proficiency in handling and operating the product. Make sure to learn all the product information, safety information, and precautions.

Store this manual in a safe place so that it can be taken out and read whenever necessary. Always forward it to the end user.

Registration:  
The company and product names described in this manual are registered trademarks or the trademarks of their respective companies.

Effective December 2010  
Specifications are subject to change without notice.

© 2004 Mitsubishi Electric Corporation

Safety Precaution (Read these precautions before use.)

This manual classifies the safety precautions into two categories:

⚠DANGER

Indicates that incorrect handling may cause hazardous conditions, resulting in death or severe injury.

⚠CAUTION

Indicates that incorrect handling may cause hazardous conditions, resulting in medium or slight personal injury or physical damage.

Depending on the circumstances, procedures indicated by **⚠CAUTION** may also cause severe injury.  
It is important to follow all precautions for personal safety.

Manual name	Manual No.	Description
FX Series User's Manual - Data Communication Edition	JY997D16901 MODEL CODE: 09R715	Explains N:N network, Parallel Link, Computer Link, Non-Protocol communication by RS and RS2 instructions/FX2N-232IF.

**How to obtain manuals**  
For product manuals or documents, consult with the Mitsubishi Electric dealer from who you purchased your product.

**1. Outline**  
The FX-232AWC-H is a RS-422/RS-232C converter to connect the FX series PLC with a personal computer.

1.1 Incorporated Items	
Verify that the following product and items are included in the package:	
Product	FX-232AWC-H type interface unit
Included items	User's Manual (this manual)

## 1.2 External Dimensions and Part Names

## 2. Specification

INSTALLATION PRECAUTIONS

**⚠CAUTION**

- Use the product within the generic environment specifications described in PLC main unit manual (Hardware Edition).  
Never use the product in areas with excessive dust, oily smoke, conductive dusts, corrosive gas (salt air, Cl<sub>2</sub>, H<sub>2</sub>S, SO<sub>2</sub>, or NO<sub>2</sub>), flammable gas, vibration or impacts, or expose it to high temperature, condensation, or rain and wind.  
If the product is used in such conditions, electric shock, fire, malfunctions, deterioration or damage may occur.

STARTUP AND MAINTENANCE PRECAUTIONS

**⚠CAUTION**

- Do not disassemble or modify the PLC.  
Doing so may cause fire, equipment failures, or malfunctions.  
\* For repair, contact your local Mitsubishi Electric distributor.
- Since the FX-232AWC-H case is made of resin, do not drop it or exert strong impact to it.  
Doing so may cause damage.

DISPOSAL PRECAUTIONS

**⚠CAUTION**

- Please contact a certified electronic waste disposal company for the environmentally safe recycling and disposal of your device.

TRANSPORT AND STORAGE PRECAUTIONS

**⚠CAUTION**

- The product is a precision instrument. During transportation, avoid any impacts.  
Failure to do so may cause failures in the product.  
After transportation, verify the operations of the product.

**2.1 General Specifications**  
The general specifications are equivalent to the PLC main unit.  
For general specifications, refer to the manual of the PLC main unit.

2.2 Electrical Specifications	
Power	5V DC power is supplied from the internal power supply of PLC
Current consumption	120mA or less
Level Conversion	Bidirectional between RS-422 and RS-232C
Baud Rate	115200 bits per second, maximum (The baud rate is different in connected equipment.)

**3. System Configuration**  
The system configuration according to the connected equipment can be found in the manual of the PLC main unit, positioning unit, programmable cam switch, or peripheral equipment.  
Additionally, when using Non-Protocol communication with the standard built-in port of the FX3G Series PLC, refer to the FX Series User's Manual - Data Communication Edition.

**4. Connecting Procedure**  
The procedure for connecting to peripheral equipment is shown.

- Power off the PLC.
- Remove the connector cover of the FX-232AWC-H.
- Connect the cables to the connectors of the FX-232AWC-H.  
(For the selection of the cable, refer to the manual of the connected equipment or peripheral equipment.)
- Fix the connector of the FX-232AWC-H and the connected cable with the fixing screws.
- Power ON the PLC.
- Power ON the Personal computer.
- Make sure the POWER Lamp of the FX-232AWC-H is lit.  
(The POWER Lamp of the FX-232AWC-H lights when the power supply is normally supplied by the PLC)
- When the FX-232AWC-H is not in use, reattach the connector cover to prevent dust from entering.

**5. Troubleshooting**  
When it is not possible to communicate between the PLC (The positioning units and the programmable cam switch are included.) and the personal computer via the FX-232AWC-H, check the following depending on the status of the POWER Lamp of the FX-232AWC-H.

State of POWER Lamp	Contents
POWER Lamp is lit.	The DC5V power supply from PLC is normally supplied. Check the following when it is not possible to communicate. <ul style="list-style-type: none"><li>Check if the correct cable is connected between the FX-232AWC-H and the personal computer.</li><li>Confirm whether the selection of the communication setting and the connected model is correctly set referring to the manual of the software which is installed on the personal computer.</li></ul>
POWER Lamp is not lit.	The DC5V power supply from PLC is not supplied. Confirm the items below. <ul style="list-style-type: none"><li>Ensure that the FX-232AWC-H and the PLC are connected with the specified cable.</li><li>Confirm whether the power supply is supplied to the PLC. (POWER Lamp of PLC lights when the power supply is correctly supplied to the PLC.)</li><li>Confirm whether the DC5V power supply capacity of PLC is sufficient. The PLC supplies DC5V to the special function blocks. (The PLC will not operate when a configuration that exceeds the DC5V capacity is used. It will also be impossible to communicate normally.)</li></ul>

**●Note Concerning the CE Marking●**  
The CE marking does not guarantee that an entire mechanical module produced in accordance with the contents of the notification comply with the following standards. Compliance to EMC standards of the entire mechanical module should be checked by the user / manufacturer.

**Standards with which this product complies**  
Type: Programmable Controller (Open Type Equipment)  
Models: Products manufactured from July 1st, 2004.

Electromagnetic Compatibility Standards (EMC)	Remark
EN61000-6-4:2007 Electromagnetic compatibility -Generic standards - Emission standard for Industrial environment	Compliance with all relevant aspects of the standard. (Radiated Emissions and Mains Terminal Voltage Emissions)
EN61131-2:2007 Programmable controllers Equipment requirements and tests	Compliance with all relevant aspects of the standard. (Radiated electromagnetic field, Fast transient burst, Electrostatic discharge, Damped oscillatory wave, Conducted RF, High-energy surge, and Power frequency magnetic field)
EN61000-6-2:2005 Electromagnetic compatibility -Generic standards Immunity for industrial environments.	Compliance with all relevant aspects of the standard. (RF immunity, Fast transients, ESD, Conducted, Surges, Power magnetic fields, Voltage dips and Voltage interruptions)

**Notes for compliance to the EMC regulation.**  
It is necessary to install the FX-232AWC-H module in a shielded metal control panel.  
For more details please contact the local Mitsubishi Electric sales site.

**Attention**


- This product is designed for use in industrial applications.

**Note**

- Manufactured by: Mitsubishi Electric Corporation  
2-7-3 Marunouchi, Chiyoda-ku, Tokyo, 100-8310 Japan
- Manufactured at: Mitsubishi Electric Corporation Himeji Works  
840 Chiyoda-machi, Himeji, Hyogo, 670-8677 Japan
- Authorized Representative in the European Community:  
Mitsubishi Electric Europe B.V.  
Gothaer Str. 8, 40880 Ratingen, Germany


This manual confers no industrial property rights or any rights of any other kind, nor does it confer any patent licenses. Mitsubishi Electric Corporation cannot be held responsible for any problems involving industrial property rights which may occur as a result of using the contents noted in this manual.

**Warranty**  
Mitsubishi will not be held liable for damage caused by factors found not to be the cause of Mitsubishi; opportunity loss or lost profits caused by faults in the Mitsubishi products; damage, secondary damage, accident compensation caused by special factors unpredictable by Mitsubishi; damages to products other than Mitsubishi products; and to other duties.



For safe use

- This product has been manufactured as a general-purpose part for general industries, and has not been designed or manufactured to be incorporated in a device or system used in purposes related to human life.
- Before using the product for special purposes such as nuclear power, electric power, aerospace, medicine or passenger movement vehicles, consult with Mitsubishi Electric.
- This product has been manufactured under strict quality control. However when installing the product where major accidents or losses could occur if the product fails, install appropriate backup or failsafe functions in the system.



MITSUBISHI ELECTRIC CORPORATION

HEAD OFFICE : TOKYO BUILDING, 2-7-3 MARUNOUCHI, CHIYODA-KU, TOKYO 100-8310, JAPAN

HIMEJI WORKS : 840, CHIYODA CHO, HIMEJI, JAPAN